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thold and Russow. In all the experiments tried, it is claimed that the substance of these walls, in both chemical and physical action, appeared entirely unlike protoplasm.

In regard to their biology, he concludes that this is a special arrangement for the preservation of the species. This appears from the fact that the ordinary wall allows these oils to escape very easily. Examples are given where volatile oils escape with great rapidity through the ordinary walls when the fruit first becomes dry. It is well known that the fruits of the Umbelliferæ such as fennel and caraway seeds, as we call them, retain their pungent aromatic odor for a long time, which he claims would be quite impossible were it not for the protection afforded the oil by the suberous nature of the walls in which it is held. Again it is also well known that the oil of these plants has an injurious effect on many insects, birds, etc., when eaten by them. Therefore these suberous walls must be regarded as a special arrangement for the preservation of the species. E. L. G.

Index to Recent American Botanical Literature.

Acacia flexicaulis. C. S. Sargent. (Garden and Forest, ii. 400, fig. 123).

Algæ—The Fresh Water—and their Relation to the Purity of Public Water Supplies. Geo. W. Rafter. (Eng. and Build. Rec. xx. 115, 116-129, 131).

Abstract of a paper read before the Am. Soc. Civ. Eng., May 1, 1889.

Asa Gray. Andrew Taylor. (Trans. and Proc. Edinburgh Bot. Soc. xvii. 346-350).

An obituary notice read before the Edinburgh Bot. Soc., May 10, 1888.

Aster Lindleyanus. (Garden and Forest, ii. 448, Fig. 127).

This fine species has recently been detected in Mt. Desert by Mr. Rand.

Bignonia radicans. L. Greenlee. (Vick's Mag. xii. 270, illustrated).

Catalpa and Paulownia—The Leaves of. A. C. Stokes. (Microscope, ix. 225-231).

Ceanothus, L.—Recent Field Notes, with a Partial Revision of Species. C. C. Parry. (Reprinted from Proc. Davenport Acad. Sci., v. 185-194).

This contribution contains critical notes on *C. hirsutus, C. intricatus, C. divaricatus* and *C. dentatus,* studied in their home, and descriptions of the following new species: *C. tomentosus, C. Lemmoni* and *C. Orcuttii,* all from California.

Contribution a la Flore de l'Amerique Equatoriale. Drake del Castillo. (Journ. de Bot. iii. 237-240).

The following species of *Centropogon* are described as new: *C. erythræus, C. gracilis, C. reticulatus, C. capitatus, C. gesneræformis, C. hirtiflorus* and *C. pallidus.*

Corema Conradi—Notes on. J. H. Redfield. (Reprinted from Proc. Phil. Acad. Nat. Sci. 1889, 136).

A brief memorandum upon the subject as printed in the BULLETIN for July, 1889.

Cratægus tomentosa. C. S. Sargent. (Garden and Forest, ii. 423, Fig. 126).

Defensive Armor of Plants.—The. Henry de Varigny. (Pop. Sci. Monthly, xxxv. 522-529).

Douglas Fir in Scotland.—The. (Garden and Forest, ii. 454, 455).

Ericaceæ of North America.—Examination of Some of the Poisonous. Alfred J. M. Lasché. (Pharm. Rundsch. vii. 208-213).

Forest Vegetation of the Rio Grande Valley.—The. C. G. Pringle. (Garden and Forest, ii. 393, 394.)

Fraxinus Greggii. C. S. Sargent. (Garden and Forest, ii. 447, Fig. 128.)

Fungi.—I. II. T. H. McBride. (Pop. Sci. Monthly, xxxv. 187-193, 350-359: illustrated).

Genera Desired for the Herbarium of Parke Davis & Co.

A twelve page list of desiderata, issued by the above firm.

Hydrocotyle Americana.—Notes on. Theodore Holm. Proc. U. S. Nat. Mus., 1888, 455-462, Pl. XLVI., XLVII.)

An account of the structure of the tubers sometimes borne by this plant as observed in the vicinity of Washington, D. C., and of the vegetative propagation effected by them and by runners.

The author regards these organs as of far greater importance than the seeds in continuing the plant. The excellent plates illustrate their anatomyand morphology.

Hypericum.—Notes on. J. G. Jack. (Garden and Forest, ii. 450, 451).

Illicium Floridanum. (Garden, xxxvi. 150, 152, Pl. 714.)

Jamaica.—Bulletin No. 14 *of the Botanical Department, July* 1889.

Under the head of Botanical Notes, by W. F., are descriptions of *Tribulus cistoides, T. maximus, Moringa pterygosperma, Ruellia tuberosa* and *Ananas sativa.*

Lauraceæ Americanæ. C. Mez. (Jahrb. König. Bot. Garten und Museum, Berlin, V ; three plates).

This exhaustive and truly magnificent monograph of a difficult order of plants comprises 556 octavo pages The author has personally visited all the larger herbaria of Europe and it was our pleasure to meet him while the Kew specimens were undergoing his investigation. A great number of new species are described and the arrangement of genera adopted differs somewhat from those of recent authors. *Systemodaphne* and *Urbanodendron* are proposed as new, and *Ariba,* Aubl. is taken up as older than *Aydendron,* Nees. No change is made in the status of North American species, but *Persea Carolinensis* (which should be written *P. Borbonia,* for this is the *Laurus Borbonia* of Linnæus) is enriched with forma *glabriuscula* (Pursh), Mez. and forma *pubescens* (Pursh), Mez. Dr. Mez very kindly worked up Dr. Rusby's Bolivian Lauraceæ and they are included in his work, *Ocotea Rusbyi* and *Nectandra Brittoniana* being new species. An account of the morphology and histology of the order is appended. The plates show floral diagrams and morphological details.

N. L. B.

Leucæna pulverulenta. C. S. Sargent. (Garden and Forest, ii. 388, Fig. 122).

Lewisia. A. Paillieux et D. Bois. (Bull. Soc. Nat. Acclimatation, No. 9, 1889, pp. 7, illustrated).

The authors have been investigating the *Lewisia rediviva,* Pursh, on account of its nutritious roots, and have brought together in this contribution all they can ascertain about its habitat, esculent properties, life history and composition. Much of their information has been derived from correspondence with Dr. Valery Havard, and his letters are freely abstracted. An analysis of the root made by Professor Trimble of Philadelphia indicates the presence of much mucilaginous matter and a corresponding deficiency of starch. Common names given for the plant are Chita, Spatulum, Racine amère, Bitter root, Mountain rose. The attention of the French investigators was directed to *Lewisia* by a memorandum in the paper on " Food products of the North Americans Indians," in the Agricultural Report for 1870.

N. L. B.

Lichenes Oregonenses. J. Müller. (Flora, 1889, 362-366).

A list of 81 species collected by Dr. Julius Roell in the Rocky Mountains, Washington Terr., Vancouver and vicinity. *Leptogium corniculatum* (Hoffm.), Minks, var. *barbatum,* is described as new.

List of Plants Collected by Dr. Edward Palmer in Lower California in 1889. Geo. Vasey and J. N. Rose. (Proc. U. S. Nat. Mus. 1888, 527-536). The following new species are described: *Hosackia* (*Syrmatium*) *Watsoni*, *H. Palmeri*, *Ribes Palmeri*, *Applopappus fasciculatus*, *Senecio peninsularis*, *Gilia* (*Siphonella*) *laxa*, *Phacelia* (*Eutoca*) *Palmeri*, *Solanum Palmeri*, *Antirrhinum Watsoni*, *Viguiera microphylla*, *Encelia laciniata*, *E. Palmeri* and *Krynitzkia Grayi.*

Magnolia glauca in its Most Northern Home. J. G. Jack. (Garden and Forest, ii. 363, 364).

A description of its habitat and the plants growing with it in the swamps of Essex Co., Mass.

Rosa Engelmanni. S. W. (Garden and Forest, ii. 376, fig. 121).

Rosa humilis, Marsh., var. *plena.* G. N. Best. (Garden and Forest, ii. 370).

In this communication Mr. Best records the discovery of what is apparently the *Rosa Pennsylvanica plena* of Marshall. He does not consider it as specifically distinct from *R. humilis* and hence proposes the above name.

Smut of Wheat and Oats J. C. Arthur. (Bull. Agric. Exper. Sta. Indiana, No. 28, pp. 23. illustrated).

A description of the fungi *Tilletia Tritici* and *T. fœtens,* the common smut of wheat, and of *Ustilago segetum*, the " black smut " of oats, with an account of the ravages of the pests and the recommendation of measures of prevention and cure. In discussing the name of the wheat smut Dr. Arthur makes use of the following language, which we hail as an indication that at least one of the editors of the " Botanical Gazette " has finally been " converted and absorbed " in the movement for the fixity of original specific names :—" The first person to name the fungus was the Scandinavian botanist, Bjerkander, who called it *Lycoperdon Tritici* (in 1775). In 1854, Tulasne published a fine memoir on the smuts and in it changed the name to *Tilletia caries*. But there are certain laws of priority that all systematic botanists are bound to respect, and when the obscurely published name of Bjerkander was brought to their attention it became necessary again to change the name, making it *Tilletia Tritici*, which is now used by the best authorities." A. being now committed to the proper system of nomenclature, we may venture a hope that both B. and C. will follow in alphabetical sequence if they are still (as in last October), open to conviction. N. L. B.

Stipules in Certain Dicotyledonous Leaves of the Dakota Rocks.—On the Discovery and Significance of. F. H. Snow. (Reprinted from Trans. Kans. Acad. Sci., 1888, illustrated).

An account of stipules in *Betulites Vestii*, Lesq.

Teratology. (Vick's Mag. xii. 281, illustrated).

An instance of median prolification in a rose.

Tigridia buccifera. S. W. (Garden and Forest, ii. 412, fig. 125).

A new species, collected in the mountains of northern Mexico by Mr. Pringle.

Trees of British Columbia.—The. M. Lopatecki. (West Am. Sci. vi. 88-91).

Uniola Palmeri. Geo. Vasey. (Garden and Forest, ii. 402, 403, fig. 124).

A new species recently collected by Dr. Palmer.

Vaccinium hirsutum. C. S. S. (Garden and Forest, ii. 364, 365, fig. 119).